

**REMARKS/ARGUMENTS**

As a result of this Amendment, claims 1-42 are under active consideration in the subject patent application.

Applicant has amended the specification to correct a variety of inadvertent grammatical and typographical errors. More particularly, Applicant has replaced paragraphs [0002], [0009], [0033], [0035] to [0037], and [0042] to [0043]. No new matter has been introduced as a result of these changes.

Applicant has added new claims 36-42 so as to define further patentable aspects of the invention. No new matter has been entered as a result of the addition of new claims 36-42. The Commissioner is hereby authorized to charge the fee for 7 additional claims and 7 independent claims, namely, \$728.00, to Deposit Account No. 04-1679.

Applicant has recently become aware of prior art that was not submitted in the Information Disclosure Statement filed on March 17, 2004. Included with this Response and Amendment is a Supplemental Information Disclosure Statement presenting these new references to the Examiner. No Fee is believed to be due in connection with this Supplemental Information Disclosure Statement, however, if the Examiner determines that a fee is required, he is hereby authorized to charge the fee for submission of an Information Disclosure Statement under §1.97(c) as set forth in §1.17(p), namely, \$180.00, to Deposit Account No. 04-1679.

In the Official Action mailed July 14, 2004, the Examiner has required restriction, under 35 U.S.C. 121, between the following groups of claims:

- 1) Group I - claims 1-23, drawn to electrical connectors, classified in class 439, subclass 66; and
- 2) Group II – claims 24-35, drawn to a method of making electrical connectors, classified in class 29, subclass 835.

Applicant respectfully submits that, if the requirement for restriction is maintained by the Examiner, new claims 36, 39, and 40-42 would be within Group I, and new claims 37 and 38 would be within Group II. Also, original claims 33 and 34 are directed to an electrical contact (without recitation of methodology), and claim 35 is directed to a connector system. Original claims 33-35 are therefore more properly aligned with Group I.

In requiring restriction, the Examiner characterizes the inventions of Groups I and II to be “related as process of making and product made”. The Examiner then alleges that the product as claimed can be made by another and materially different process, e.g., by extruding a unitary structure to form a tube instead of rolling. Insofar as the Examiner’s position is understood, Applicant respectfully traverses the same, and requests reconsideration. Withdrawal of the requirement for restriction is respectfully requested for the following reasons.

In stating his position, the Examiner appears to not only be ignoring the close correlation between the method claims and the product claims, but also to have substantially misunderstood the structure and function of the invention all

together. Even a cursory review of claims 1-42 would reveal their origin in a single inventive act, and the impossibility of their manufacture by the Examiner's suggested alternative, i.e., by extrusion.

More particularly, claims 1-23, 33-36, 39, and 40-42 define a novel electrical contact comprising a plurality of interlaced, annealed, and unsupported wires. Claims 24-32, 37, and 38 define a unique process for forming the electrical contacts of the present invention that comprises interlacing a plurality of wire conductors so as to form an electrical contact or its precursor, and annealing the electrical contact so as to substantially eliminate elastic engagement between the wire conductors. When viewed together claims 1-42 are defining the same discovery, each embodying essentially the same steps and limitations. It is Applicant's position that the claims define subject matter that is so related and so interdependent that good judgment dictates their inclusion in one application.

The Examiner's suggestion that the electrical contact defined by claims 1-23 and 33-35 could be made by extrusion, ignores both the defined structure of the invention and the underlying goals and the problem solved by Applicant's discovery. The specification points out at, pages 9 and 10, paragraph 0032, as follows:

" . . . the present invention provides an electrical contact 2 that comprises a large elastic range as a result of being formed so as to comprise an interlaced or woven, annealed metal structure that provides a plurality of individual beam-sections 6. Electrical contact 2 may be formed by weaving at least three or four discrete wires 8 together, i.e., manipulating the wires together so as to interlace them to form a unitary structure, to thereby form an electrical contact precursor mesh 12 in either a tubular

configuration (Figs. 2 – 6 and 11 – 12) or a sheet (Figs. 9 – 10 and 13 – 17). Advantageously, the tubular embodiments of the present invention do not require there to be a central support structure around which the wires are wound or, an outer or inner support structure within which the wires reside in a formed electrical contact configuration, since the combination of interlacing and annealing wires 8 removes the need for any additional integral or over-layed, co-extruded, or over-molded structural support. In other words, the electrical contacts can be operated for their intended purpose while simply comprising a mesh that has been manipulated to take a shape suitable for interconnecting two or more adjacent structures. It is in this sense then that electrical contacts 2 of the present invention are said to comprise an unsupported structure. . . .”

Thus Applicant clearly states that the interlaced and annealed structure has as at least one goal avoiding extrusions or the use of support structures. In the prior art of record in this case, interlaced conductors are always either supported by an elastomeric central support or an elastomeric outer covering in order to provide the requisite force-deflection properties needed for use as an electrical contact. This need for an elastomeric central support or an elastomeric outer covering results in the imposition of a lower limit to the physical size of the device for a given elastic force-deflection characteristic. Thus, Applicant's discovery of an electrical contact comprising a plurality of interlaced, annealed, and unsupported wires solves the problem of providing a relatively large elastic force-deflection range in an electrical contact having a reduced size relative to the devices to be interconnected by it. This is further amplified, at page 10, paragraph 0033, where Applicant makes clear that :

“ . . .stainless steel wires 8 are woven together to form a tubular electrical contact 2. In this arrangement, each wire 8 takes

a helical path so as to be interlaced with each adjacent wire 8, while at the same time, each wire 8 only undergoes a substantially elastic deformation, i.e., each wire 8 would exhibit bending properties wholly consistent with the elastic limit portion of its underlying material's characteristic "*stress-strain*" or "*force-deflection*" curve. Substantially no plastic deformation is caused to occur in wires 8 during this manufacturing step. Also, it should be understood that at the points of intersection/overlap 9 of wires 8 in mesh 12, no bonding or other mechanical interconnection exists between the adjacent portions of wires 8. As a result of this structural arrangement, the adjacent portions of each wire 8 that define each of the intersection/overlap points 9 are movable relative to one another. . . ."

And, again at page 13, paragraph 0037, as follows:

" . . .The combination of weaving individual wires 8 into a structure having inherent macro-elastic properties, with an annealing step to set the individual wires 8 in their woven structural arrangement, provides for significantly enlarged force deflection properties. Thus when woven into mesh 12 according to the invention, and then annealed, plurality of wires 8 provide a resilient electrical contact structure having a significantly increased elastic range. . . ."

If the Examiner's suggested alternative manufacturing process (extrusion) were employed (which Applicant has taught away from), electrical contacts would be produced that, as a result of the nature of the extrusion process, would have inherent elastic and plastic deformations in the conductors, and would require an elastomeric outer covering or inner support in order to provide the requisite force-deflection properties. Moreover, even if an extruded electrical contact were possible, the annealing of such a structure would not yield an electrical contact with the large force-deflection characteristics achieved by Applicant's invention

since the individual conductors would have undergone plastic deformation during the extrusion process.

Applicant also traverses the Office's requirement for restriction since it is apparent that the unitary inventive thread common to Group I and Group II is the interlacing of a plurality of wire conductors so as to form an electrical contact or its precursor, without the introduction of plastic deformations in the conductor, and annealing the electrical contact so as to substantially eliminate elastic strain between or within the wire conductors. This concept is common to both groups artificially created by the Examiner.

In requiring restriction, the Examiner also notes the inventions are classified in different classes and sub-classes, thus alluding to the fact that the inventions would involve divergent fields of search. However, as the Office is well aware such a factor, per se, is not a basis for determining distinctiveness in accordance with MPEP 806.

Furthermore, it is respectfully submitted that there is nothing in 35 U.S.C. 121 that gives the Patent Office the authority to require restriction between different statutory classes of claims unless the claims cover "independent and distinct inventions." It is respectfully submitted that the statutory requirements, not having been met here vis-à-vis Groups I and II, respectively, the Examiner should withdraw the requirement for restriction and provide Applicant with an action on the merits of the withdrawn claims.

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Reply to Office Action dated July 14, 2004

It should also be noted that restriction requirements as prescribed by 35 U.S.C. 121 are discretionary with the Examiner, and in view of the remarks above, the restriction requirement should be withdrawn.

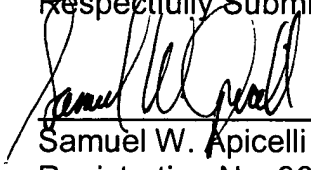
In summary, claims 1-42 are believed to be directed, respectively, to a single invention. However, so as to be fully responsive Applicant provisionally elects to prosecute the alleged invention of Group I, i.e. claims 1-23, 33-36, 39, and 40-42. It is further requested that, without further action thereon, claims 24-32, 37, and 38 be retained in this application, without prejudice, pending disposition of the application, and for pursuit in related applications.

All of the claims presented in this application are in condition for allowance. An action of the merits is respectfully requested.

If a telephone conference would be of assistance in advancing prosecution of the above-identified application, Applicant's undersigned Attorney invites the Examiner to telephone him at 717-237-5516.

Date: 9/10/04

Respectfully Submitted,

  
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